

### **ABSTRACT**

A light-emitter structure is provided. The light emitter structure includes a platform. An  $\text{In}_x(\text{Al}_y\text{Ga}_{1-y})_{1-x}\text{P}$  lower clad region is formed on the platform and has a lattice constant between approximately 5.49 Å and 5.62 Å. A strained quantum-well active region is formed on the lower clad region. An  $\text{In}_x(\text{Al}_y\text{Ga}_{1-y})_{1-x}\text{P}$  upper clad region is formed on the strained quantum well active region.